



**PARK CITY MUNICIPAL CORPORATION**

**SOILS ORDINANCE AREA ENVIRONMENTAL MANAGEMENT SYSTEM**

**2007 ANNUAL REPORT**

**December 10, 2007**

**Prepared by: Park City Municipal Corporation (PCMC)**  
**445 Marsac Avenue**  
**P.O. Box 1480**  
**Park City, Utah 84060-1480**  
**Jeff Schoenbacher, Environmental Coordinator**  
**(435) 615-5058**  
**[jschoenbacher@parkcity.org](mailto:jschoenbacher@parkcity.org)**

**Submitted to: Utah Department Environmental Quality**  
**168 North 1950 West**  
**Salt Lake City, UT 84114**  
**Mo Slam, Project Manager**  
**(801) 536-4282**

**United States Environmental Protection Agency**  
**Region 8**  
**999 18<sup>th</sup> Street**  
**Suite 500**  
**Denver, CO 80202**  
**Kathy Hernandez, Project Manager**  
**(303) 312-6101**

## **TABLE OF CONTENTS**

<b>1.0</b>	<b>INTRODUCTION:</b>	<b>2</b>
<b>2.0</b>	<b>Soil Mitigation Compliance Program</b>	<b>2</b>
Table 1.0	CAPPED LOTS	3
<b>3.0</b>	<b>Revised Soils Ordinance - adopted 06-27-2006</b>	<b>4</b>
<b>4.0</b>	<b>Annual Lot Risk Assessment</b>	<b>5</b>
4.1	Non-Characterized Lots	5
<b>5.0</b>	<b>Non-compliant lots</b>	<b>5</b>
<b>6.0</b>	<b>Education and outreach</b>	<b>6</b>
6.1	Soil Ordinance Resident Notices	7
6.2	Summit County Lead Screening Services	7
6.3	New Residents and Renters Orientation	7
6.4	Real Estate Agent Orientation	7
6.5	Lead Awareness Campaign to Local Physicians	7
6.6	Deployment of the Environmental WebGIS Module <a href="http://www.mapserv.utah.gov/ParkCityGIS/">http://www.mapserv.utah.gov/ParkCityGIS/</a>	8
<b>7.0</b>	<b>Prospector Sampling Records and Data</b>	<b>9</b>
<b>8.0</b>	<b>Prospector Drain Outfall</b>	<b>9</b>
<b>9.0</b>	<b>Worker Health and Safety</b>	<b>10</b>
<b>10.0</b>	<b>Top Soil Assistance program (TSAP)</b>	<b>10</b>

## **Addendum**

- [Park City's Landscaping and Maintenance of Soil Cover Ordinance](#)
- [Certificate of Compliance](#)
- [Park City Environmental Information Handbook](#)
- [Soils Ordinance Home Owners BMP Brochure](#)
- [Lead Awareness Letter](#)
- [Environmental Information Handbook](#)
- [Full-Scale Anaerobic Treatment Unit](#)
- [Compliance Map](#)
- [Awareness Letter](#)
- [Physician Notice Letter](#)
- [BMP Brochure](#)
- [Land Management Company](#)
- [Prospector Treatment Cell Design](#)
- [Wetland Vault](#)
- [Pilot Cell Results Summary – Dr. Fitch](#)

## 1.0 INTRODUCTION:

In a cooperative effort with the Utah Department of Environmental Quality (UDEQ) and the United States Environmental Protection Agency (USEPA), Park City Municipal Corporation (PCMC) has agreed to the implementation of an Environmental Management System (EMS) that further protects human health and the environment within the Soils Ordinance Area. The established goals of the EMS were to define the environmental procedures, monitoring, education, and controls for containing soils impacted with mine tailings. The EMS program was adopted by [resolution](#) and funded by the City Council on April 15<sup>th</sup> 2004<sup>1</sup>. Furthermore, due to the requirements within the EMS, the City Council approved revisions to the “[Park City’s Landscaping and Maintenance of Soil Cover Ordinance](#)”<sup>2</sup> in order to support the EMS.

This annual report represents PCMC 2007 Annual Report, which the City agreed to submit to USEPA and UDEQ in order to summarize the annual EMS benchmarks.

## 2.0 SOIL MITIGATION COMPLIANCE PROGRAM

[Addendum 1](#) is the current compliance map for all properties within the original soils ordinance boundary. The lots identified in red are properties that have been capped and are considered compliant with the ordinance. The lots identified in black, are properties that have either not been sampled or have been sampled and are under enforcement. Finally, the properties identified in yellow are units that were capped during the Improvement District time frame. The original ordinance boundary has 293 residential lots and to date there remain 16 properties that have yet to be sampled or capped with 6” of acceptable cover. As a result, there are 277 lots that have been capped and sampled to validate compliance and subsequently a Certificate of Compliance has been issued.

The EMS proposal has an established goal of capping 15 lots per year. Similar to last year, that goal was exceeded this year, resulting in **31 properties** being issued “Certificate of Compliance” documents that verify the installation of a cap and acceptable cover that has tested <200 ppm lead. Out of 31 lots, the majority were capped in accordance with the conventional landscaping standard of 6” of clean topsoil substrate and vegetation layer. Typically, there continues to be many property owners that prefer the combination of the xeriscape and conventional landscaping standard. The xeriscape standard was a 2004 revision to the ordinance and provided owners with the flexibility of complying with the ordinance while also employing water conservation practices. There were some owners that went even further with the xeriscape standard by installing a 6” clean top soil substrate along with a weed barrier fabric, and 6” of bark or rock. It should also be noted that the repository at Richardson Flats continues to be a beneficial resource for property owners that were concerned with the financial impacts of disposing of soils within a permitted landfill. Because of the existence of the repository, many owners have removed berms containing mine tailings as well as choosing to excavate an additional 12” to 16” of impacted soil and reincorporate clean topsoil in order to re-certify the lot. These owners utilized the repository for disposing of generated soils in order to achieve compliance with the ordinance standards.

The sampling protocol for a property seeking compliance remains the same; composite samples are procured from the front, back, and both sides of the dwelling. The samples are then

---

<sup>1</sup> Tab 1 – Council Resolution - 4/15/04

<sup>2</sup> Tab 2 - Chapter 15 – 11-15-1 Building Code

submitted under a Chain of Custody to Chem Tech-Ford Laboratory (State Certified) and analyzed for total lead. After receiving the final lab report supporting the lead levels being <200 ppm, the property is considered to be compliant and a [Certificate of Compliance](#) is sent along with a sampling narrative, results report, site map, and Homeowner BMP Brochure. Table 1.0 represents the properties that were capped this year<sup>3</sup> and subsequent lead concentrations:

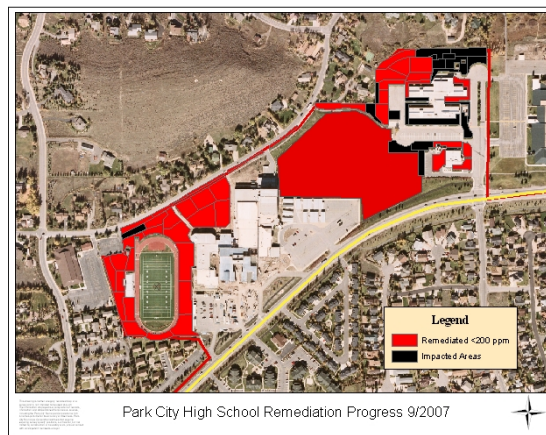
**Table 1.0 CAPPED LOTS**

<b>Date Sampled</b>	<b>Address</b>	<b>Landscaping Type</b>	<b>Lead Average ppm</b>
2/7/2007	2256 SIDEWINDER DRIVE	<b>Xeriscape</b>	<b>No Sample</b>
4/6/2007	2291 COMSTOCK DRIVE	<b>Xeriscape</b>	<b>No Sample</b>
4/17/2007	1790 BONANZA DR	Conventional	<b>20.75</b>
4/30/2007	2485 SIDEWINDER DRIVE	Conventional	<b>28</b>
5/21/2007	2319 COMSTOCK DRIVE	Conventional	<b>134.25</b>
5/29/2007	108 PARK AVENUE	Conventional	<b>301</b>
5/29/2007	2664 ANNIE OAKLEY DRIVE	Conventional	<b>253.5</b>
5/31/2007	2425 DOC HOLLIDAY DRIVE	Conventional	<b>324.75</b>
6/4/2007	1900 PARK AVE	Conventional	<b>79.25</b>
6/6/2007	1220B SULLIVAN RD	Conventional	<b>36</b>
6/12/2007	2238 SIDEWINDER DRIVE	Conventional	<b>27.60</b>
6/15/2007	2226 SIDEWINDER DRIVE	Conventional	<b>33</b>
6/15/2007	2212 SIDEWINDER DRIVE	Conventional	<b>19</b>
6/27/2007	2175 COMSTOCK DRIVE	Conventional	<b>16.60</b>
6/27/2007	2286 SIDEWINDER DRIVE	Conventional	<b>11.83</b>
7/2/2007	2665 SIDEWINDER DRIVE	Conventional	<b>91.20</b>
7/20/2007	2320 COMSTOCK DRIVE	Conventional	<b>14</b>
7/23/2007	57 DALY AVENUE	Conventional	<b>35</b>
7/23/2007	59 DALY AVENUE	Conventional	<b>89</b>
7/23/2007	329 DALY AVENUE	Conventional	<b>24.5</b>
7/30/2007	2178 SUNRISE CIRCLE	Conventional	<b>20.66</b>
08/07/07	1940 PROSPECTOR AVENUE	<b>Xeriscape</b>	<b>No Sample</b>
9/12/2007	2011 HIGH STREET	Conventional	<b>67</b>
9/27/2007	2169 MONARCH DRIVE	Conventional	<b>16.4</b>
10/16/2007	633 WOODSIDE AVENUE	Conventional	<b>100</b>
10/10/07	104 PARK AVENUE	<b>Xeriscape</b>	<b>No Sample</b>
10/16/07	633 WOODSIDE AVENUE	Conventional	<b>100</b>
10/22/2007	2301 MONARCH DRIVE	Conventional	<b>13</b>
11/12/07	230 SWEDE ALY	<b>Xeriscape</b>	<b>No Sample</b>
11/12/2007	1889 PROSPECTOR AVE	Conventional	<b>10.65</b>
11/12/2007	240 SWEDE ALY	<b>Xeriscape</b>	<b>No Sample</b>
11/26/07	2265 MONARCH DR	<b>Xeriscape</b>	<b>No Sample</b>

<sup>3</sup> List includes lots within the original and expanded ordinance area.

### 3.0 REVISED SOILS ORDINANCE - ADOPTED 06-27-2006

There were no revisions to the “[Landscaping and Maintenance of Soil Cover Ordinance](#)” found within Park City Building Code Chapter 11-15 was revised last year and approved by City Council June 27<sup>th</sup> 2006. As stated in last year’s annual report, the ordinance was expanded to include the Park City High School (PCHS) complex. During 2007 Park City High School submitted to the Building Department a formal work plan for this site. The plan was mutually agreed upon by the City and PCHS, and Amec Earth and Environmental, Inc (AMEC) is overseeing the remediation for Park City School District. The purpose of revising the ordinance was to reinforce Park City and the School Districts commitment to protect human health and the environment by remediating the school complex and applying the applicable institutional controls. The following is the current compliance status of the PCHS complex, sections depicted in red have been capped and tested under 200 ppm lead.



Also mentioned in last year’s EMS Annual Report PCMC and King Development Group, LLC have entered into the Voluntary Clean-up Program (VCP) with the Utah Department of Environmental Quality for the Alice Lode Mining site situated off of King Road. The Alice Lode Mining Claim comprises of 10.17 acres with 8.63 acres being owned by King Development Group and 1.54 acres owned by Park City Municipal Corporation (PCMC). The site was previously a silver mining claim that was operated from 1920 to 1935. PCMC successfully obtained Brownfield grant funding in 2003 resulting in a United States Environmental Protection Agency (USEPA) Targeted Brownfield Phase II Assessment being completed for this property. This year a formal work plan was submitted to UDEQ and approved, therefore the City anticipates that work will commence in 2008. It should be mentioned that this project has other issues related to the Planning Department as a result; it is unknown whether these will be resolved to allow the remediation. After the site is remediated it is anticipated that the ordinance will be revised to include the VCP boundary and protect the site with the institutional controls and a site management plan.

Finally, it is important to reiterate the following ordinance standards that were adopted in 2004 that are currently applicable for all lots within the boundary:

- Acceptable cover was expanded from just grass and vegetation cover to include xeriscape-landscaping practices. Specifically the standard requires a weed barrier fabric and 6” of rock or bark.
- Soils are strictly prohibited from being transported or reused outside the Soils Ordinance Boundary.

- Soils being disposed of are to be characterized for arsenic and lead and disposed of within a permitted facility depending on the TCLP characteristics.
- The reuse of soils within the Soils Ordinance Boundary is allowed providing the area is capped and the Building Department pre-approves the site.
- The boundary was redrawn to exclude Chatham Crossing due to PCMC, USEPA, and UDEQ concurring that the area does not pose a threat to human health or the environment. This was based on evaluating several years of soils data that further substantiated this claim.
- The boundary has been expanded to include the Transit Center and the CERCLIS Marsac Mill Site. The purpose of including the Transit Center was to protect the facility and the Marsac Mill site, which is known to contain elevated levels of heavy metals.
- Non-compliant lots were required to conform by December 31, 2004.
- Non-sampled and uncharacterized lots are to be sampled by 2006.
- Non-compliance has been upgraded to a nuisance and enforced as a Class B Misdemeanor.
- The lot-testing fee for compliance has been waived and is now done without a \$100.00 charge to the owner. In addition, the City conducts sampling on generated soils destined for disposal and there is no charge for TCLP analysis.
- No parking of vehicles on capped lots.

#### **4.0 ANNUAL LOT RISK ASSESSMENT**

The risk assessment was completed this year resulting in two properties being issued Administrative Civil Enforcement (ACE) penalties for non-compliance with the ordinance. The ACE program is a new program that administers a daily fine (\$25) for non-compliance with the ordinance. All of the lots that were cited are related to properties that have not been sampled or the property is known to have elevated levels of lead but have not been capped.

Only one owner cited remains outstanding with the other coming into compliance. As a result, the property has been referred to the City Attorney for further enforcement. The following lot remains non-compliant:

- 2775 Annie Oakley Drive

##### **4.1 *Non-Characterized Lots***

Within the original ordinance area all lots have been sampled, therefore there were no notices sent for non-characterized lots. The only exception to that statement is that there still remain non-characterized lots within the Expanded Soils Ordinance Boundary; however those properties will be addressed once the original ordinance boundary reaches 100% compliance.

#### **5.0 NON-COMPLIANT LOTS**

Within the original ordinance area all non-compliant properties have been issued Final Notices or Administrative Civil Enforcement citations. These lots are planned to be remediated this year or next year (2008) and attain compliance with the ordinance. The City anticipates 100% compliance during the year of 2008.



## 6.0 EDUCATION AND OUTREACH

In order to assist with the EMS educational and outreach obligations, PCMC distributed two products titled “[Park City Environmental Information Handbook](#)” and “[Soils Ordinance Home Owners BMP Brochure](#)”. This year the Environmental Information Handbook and Home Owners BMP Brochure were revised to reflect the current compliance map along with the following:

- Soils Ordinance FAQ’s.
- Residential Best Management Practices
- Ordinance Boundary Compliance Map
- Top Soils Assistance Program (TSAP)
- Soils Ordinance Boundary Map
- Streets within Boundary
- Addresses within Boundary
- Gardening and Plant Bed Recommendations
- Storm Water Quality
- Conservation Reserve Program
- Open Space Information
- Recycling Program
- Household Waste Oil Acceptors
- Drinking Water Information
- Water Treatment Information
- Blue Sky Program
- Contacts and Reference (This section included the county contact for blood lead testing.)

The handbook has been well received by the public since it clarified some misunderstandings the community has had with the ordinance. The handbook was sent to the following entities as a reference:

- All owners of property within the original and expanded boundary.
- Real Estate Agents
- Land Management
- Local Pediatricians
- HOA’s
- Homebuyers
- PCMC employees
- Contractors
- Building Permit recipients

The second outreach product distributed, was the [Home Owners Best Management Practice Brochure](#). The BMP brochure was sent out to all residents within the Soils Ordinance Boundary on March 23<sup>rd</sup> 2007. This product is also made available in the Building and Planning Department and was sent to the EMS other outreach contacts that were agreed to by the Soils Stakeholder Group. Regarding the Environmental Information Handbook, it was sent to all Ordinance Property owners on January 31<sup>st</sup> 2007.

## **6.1      *Soil Ordinance Resident Notices***

On January 3rd 2007, residents that have an issued “Certificate of Compliance” were sent a [lead awareness letter](#). The purpose of the letter is to increase awareness to the underlying lead levels that are contained under the clean topsoil cap. For those that received this correspondence, the City had historical data on the initial sampling that occurred for the lot before it was capped. This data was queried from the Environmental Database and all lots with an underlying lead level that exceeded the USEPA Health Based Risk Standard (400 ppm lead) for residential property receive this correspondence. Also the [Soils Ordinance Home Owners BMP brochure](#) was sent to all ordinance addresses on March 23<sup>rd</sup> 2007. The BMP brochure is also included in all newly issued “Certificate of Compliance” documents that are sent to the owners. Lastly, in addition to these outreach efforts, the brochure and handbook are made available at the Marsac Building and Park City Public Library.

## **6.2      *Summit County Lead Screening Services***

The Summit County Blood Lead Screening Service has been mentioned in both the Homeowner BMP Brochure and the Environmental Information Handbook under contacts and FAQs. The address and phone number for the county testing program is documented in these two outreach products for residents that wish to be tested. In addition, the City receives phone inquiries for testing children and they are referred to the Summit County Health Department.

## **6.3      *New Residents and Renters Orientation***

PCMC has supplied the Environmental Information Handbook and BMP brochure to land management and real estate agencies. [Addendum 13](#) represents the letter that was sent along with the BMP brochures, which were sent to those companies on February 2<sup>nd</sup> 2007. The Building Department receives numerous calls from prospective buyers and real estate agents requesting the information handbooks and BMP brochures.

## **6.4      *Real Estate Agent Orientation***

Real Estate agencies were provided with the [Environmental Information Handbook](#) and [BMP brochure](#) for distribution and to make them aware of the ordinance standards. Nineteen agencies were sent this information on February 2<sup>nd</sup> 2007. Furthermore, the Real Estate Community has been educated by PCMC presenting at the Board of Realtor meetings. During the meetings the handbook is distributed along with ordinance boundary maps, so there is no confusion regarding the boundaries. Lastly, on October 4<sup>th</sup> 2007 the Park City Board of Realtors representatives were trained on the use of the Environmental WebGIS Module, which is located at the following URL - <http://www.mapserv.utah.gov/ParkCityGIS/>. The City believes this will be an instrumental tool for due diligence purposes – allowing interested parties to research a specific address for compliance and underlying lead concentrations.

## **6.5      *Lead Awareness Campaign to Local Physicians***

On February 2<sup>nd</sup> 2007, five clinics were sent an [awareness correspondence](#) along with numerous BMP brochures for distribution. The correspondence also contained the Environmental Information Handbook that identifies the addresses that reside within the ordinance for reference purposes. Within the letter PCMC encourages physicians to test for blood lead for those clients residing within the boundary.



**6.6 Deployment of the Environmental WebGIS Module**  
***<http://www.mapserv.utah.gov/ParkCityGIS/>***

On October 3rd 2007, PCMC released the first WebGIS application and this module will be a resource to identify the environmental impacts related to the historical mining district. The purpose of this module is to convey the City's environmental issues to the public via the Web. This work was a cooperative effort between Utah Automated Geographic Reference Center (AGRC), East Canyon Creek Watershed Committee and the Park City Building Department. The City is especially appreciative to the East Canyon Creek Watershed Committee for their 60% cost share contribution to the development of the application through the Clean Water Act – Section 319 Grant funds.

The following is the data you will find at this site:

- **Environmental Management System Annual Reports**  
Reports that are sent to regulatory agency that provides an update on current remediation.
- **Storm water Management Plan Annual Reports**  
Reports that are sent to the regulatory agencies defining the city's storm water efforts to improve water quality in the watersheds.
- **Working Soils Ordinance Regulations**  
The actual ordinance approved by USEPA and UDEQ.
- **Soils Ordinance Boundary Search**  
The boundary that defines all regulated properties within the ordinance boundary and the search conveys whether it is within the boundary.
- **Soils Ordinance Capping Compliance**  
Information provides you with compliance status and associated lead concentrations for sampled lots. Red represents compliance, black non-compliant, yellow compliant during the improvement district.
- **Known Mine Tailings Area**  
Areas known to be impacted with mine tailings.
- **Mine Hazards**  
Known mine hazards in the area.
- **FEMA Flood Zone Delegations**  
Regulated flood zone areas within the city limits.
- **City Zoning**  
Different zoning areas with the city limits.
- **Regulated Streams**  
Navigable waters within the city limits.
- **Jurisdictional Wetlands**  
Wetlands protected within the city limits with a 50' defined buffer.
- **Watershed Boundaries**  
These layers represent East Canyon and Silver Creek Watershed.
- **Drinking Water Source Protection Zones**  
Drinking water recharges source protection zones protected under ordinance.
- **10' Elevation Contours**
- **Bike Trails**
- **Conservation Reserve Program**  
Layer represents the permanent riparian buffer zone for McLeod Creek Stream corridor.

## 7.0 PROSPECTOR SAMPLING RECORDS AND DATA

PCMC continues to populate a comprehensive database to track lot compliance and analytical results. The database has been populated with analytical results dating back to 1985. This data includes initial sampling projects as well as verification sampling results that are conducted after the cap is installed. The system is integrated into a GIS ArcMap project that plots all capped lots and spatial evaluations can be conducted in regards to lead levels. Lastly, the GIS ArcMap continues to expand upon the discovery of new historic mining impacts.

## 8.0 PROSPECTOR DRAIN OUTFALL

This year PCMC with oversight from Dr. Fitch with the University of Missouri Rolla Civil Environmental Engineering Department and David Reisman who is the Director of USEPA's ORD Engineering Technical Support Center and National Risk Management Research Laboratory finalized the design of a [full-scale anaerobic treatment unit](#). However the design was not completed early enough in the year for competent contractors to bid on the project, therefore it will go out to bid early 2008.

What was completed this year in relation to the to the Prospector drain is Nelson Brother's designed and installed the vault upstream from the proposed site for the full-scale wetland treatment area. The purpose of the [vault](#) is to act as a bypass, in the event the flow exceeds the treatment capacity. Within this unit, PCMC also proposes to have flow meters installed in this unit in order to monitor the flow entering the biocell as well as the flow bypassing the treatment unit. The vault design has changed to accommodate the placement of the entry point and exit point of the drain water.

Included with this document is [Dr. Fitch's summary](#) of water quality monitoring data for the Prospector Drain outfall and the biocells pilot. The outfall data covers almost four years of monitoring (since June 2003). The first biocell operated from late June 2004 to April of 2006. This biocell was dug up and the basin was used for the second biocell, which began operation in July of 2006.

In summary:

- Zinc removal varies from 17 – 90%, averaging about 50%.
- Cadmium removal is 36 – 99+%, averaging about 70%.
- Performance does not seem to correlate to season.
- Iron is not a concern due to low concentrations.
- Sulfate removal is not as high as desired.

This last point is important: the biocell can be expected to operate with modest (~50% average) removal, as have the small-scale biocells. To increase removal, more biocell total volume is required or supplemental organic must be fed to the system.

Funding for this project was approved by the City Council and a budget of \$200,000.00 was allocated for the construction of the treatment system for treating the Prospector drain. However, it is anticipated that the cost will be much higher (~\$500,000.00); therefore the budget will have to be revisited in 2008.

## **9.0 WORKER HEALTH AND SAFETY**

All external and internal utility or contract workers involved in generating soils and earthwork have been provided with a Worker Health and Safety Notice and recommended protective equipment. It is PCMC intent to increase worker awareness of practices that they can employ to minimize exposure to them and their families. This year the Park City High School reconstruction project commenced after the contractor submitted a Soils Management Protocol, Storm Water Management Plan, and Work Health and Safety. Also the contractor was required to provide employees with the Worker Health and Safety Notice and make them aware of the necessary personal protection required for the project.

Other companies that were required to fulfill the above worker health and safety requirements and soil management protocol were Comcast, Park City Municipal Corporation, and Silver Star Development. The City requires larger projects submit a more extensive soils management plan that specifies the worker health and safety requirements (PPE), disposal companies, and best management practices as it relates to storm water controls.

## **10.0 TOP SOIL ASSISTANCE PROGRAM (TSAP)**

Consistent with Council policy direction and to encourage accelerated compliance with the Soils Ordinance, to date \$75,098.73 has been allotted to property owners for installing acceptable cover. The implementation of the proposed TSAP is to provide property owners with assistance and incentive to procure compliant topsoil to adequately cap properties with known elevated lead levels. The TSAP has been divided into two funding phases; Phase I is specific to lots within the Original Ordinance Boundary (Prospector) and a Phase II is for the properties within the entire Soils Ordinance Boundary (Original and Expanded). The program was approved and funded by the City Council on August 11<sup>th</sup> 2004 and is administered by the Building Department. Upon issuance of a Certificate of Compliance the owner is provided with a TSAP summary fact sheet and instructions for reimbursement.